

CLAIMS

What is claimed is:

1. A diode pumped solid state laser system, comprising:
two or more diode pumped solid state laser cavities able to produce beams of
two or more respective wavelengths; and
an optical configuration to align the paths of said beams along a common optical
axis.
2. The system of claim 1, comprising a controller to control the operation of at
least one of said laser cavities.
3. The system of claim 1, wherein at least one said laser cavities comprises a
primary laser section and a frequency doubling section.
4. The system of claim 1, wherein said primary laser section comprises a pump
diode laser source.
5. The system of claim 1, wherein said optical configuration comprises at least
one fold mirror.
6. The system of claim 1, wherein said optical configuration comprises one or
more combiner mirrors to combine the paths of at least two laser beams.
7. The system of claim 1, comprising a plurality of optical ports associated with
an output of said optical configuration.
8. The system of claim 1, comprising at least one delivery system to deliver at
least one of said laser beams to a target area.
9. The system of claim 1, wherein said two or more diode pumped solid state
laser cavities are three diode pumped solid state laser cavities, able to
produce beams of three respective wavelengths.
10. An illumination method, comprising:
aligning the paths of two or more diode pumped solid state generated laser
beams having two or more respective wavelengths on a common optical
path; and

delivering at least one of said laser beams to a target area.

11. The method of claim 10, comprising:

passing said two or more laser beams through two or more respective fold mirrors; and

combining the paths of at least two said respective laser beams using one or more combiner mirrors.

12. The method of claim 10, further comprising delivering an aiming beam substantially along said optical path.

13. The method of claim 10, comprising channeling said two or more respective laser beams via one or more optical ports.

14. The method of claim 10, comprising delivering said respective laser beams using one or more delivery systems.

15. An apparatus to combine the paths of respective laser beams of two or more wavelengths, comprising:

a collimation lens to collimate at least two diode pumped solid state laser generated beams of different wavelengths; and

an optical configuration to align the paths of the collimated beams along a common optical axis.

16. The apparatus of claim 15, wherein said optical configuration includes at least one combiner mirror.

17. The apparatus of claim 15, comprising a moving attenuator to attenuate at least one of said beams.

18. The apparatus of claim 15, comprising at least one power-monitoring detector to detect the power of at least one of said beams on said common optical axis.

19. The apparatus of claim 15, comprising at least one pickoff mirror to reflect at least one of said beams to a diffuser.

20. The apparatus of claim 15, comprising a safety shutter to limit the exposure of said target to said beams.

21. The apparatus of claim 15, comprising an aiming beam to enable aiming of said beam towards a target.
22. The apparatus of claim 15, comprising at least one optical port associated with said common optical axis.
23. The apparatus of claim 15, comprising at least one optical socket.
24. The apparatus of claim 15, comprising one or more laser delivery systems to deliver at least one of said beams to a target.
25. A method to operate a laser illumination system at one or more selected wavelengths, comprising:
- selecting a desired wavelength to be delivered;
 - selecting a diode pump laser source to activate;
 - selecting laser exposure settings for the selected wavelength; and
 - activating said selected laser source to generate a beam with a desired wavelength.
26. The method of claim 25, further comprising:
- processing feedback from a detector, for said generated beam; and
 - validating accuracy of the actual power output of said generated beam.